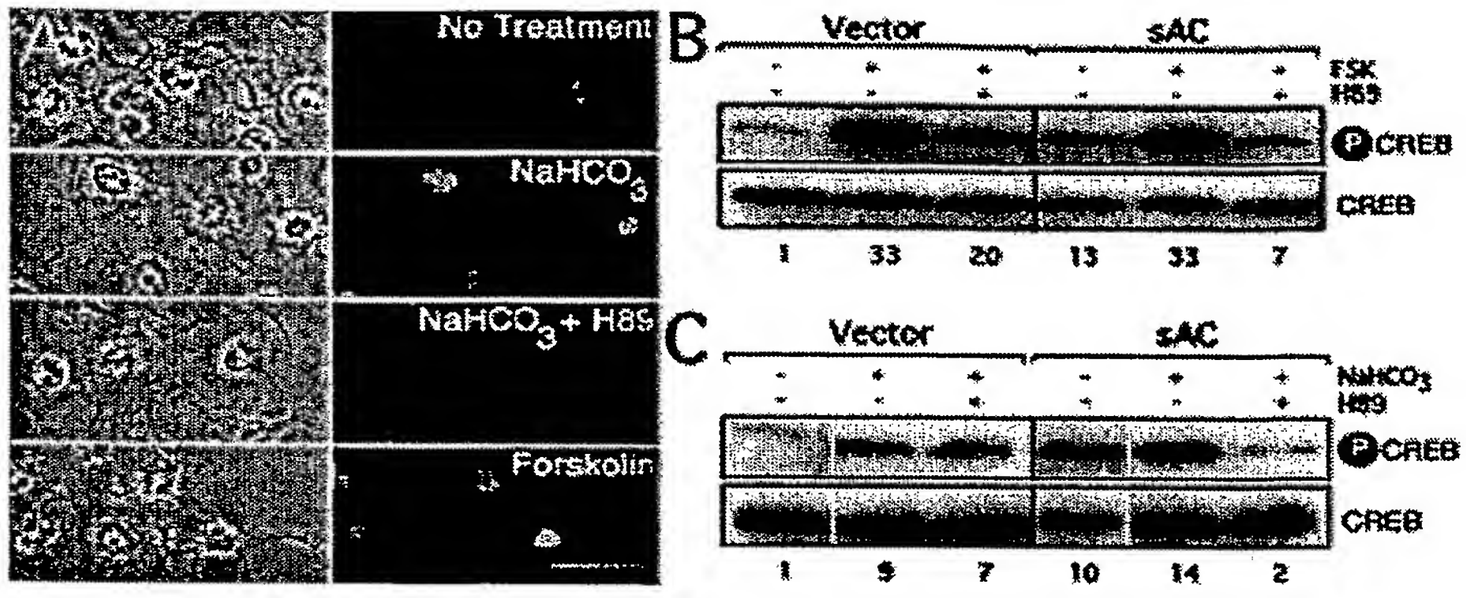
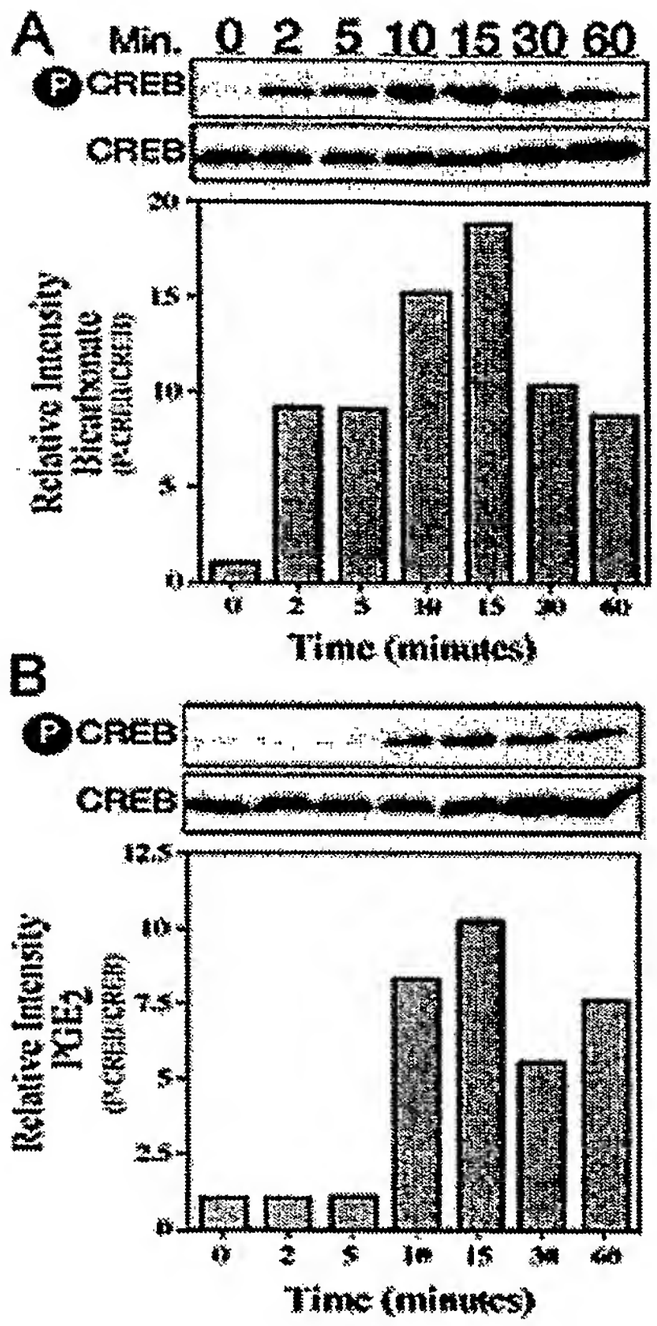
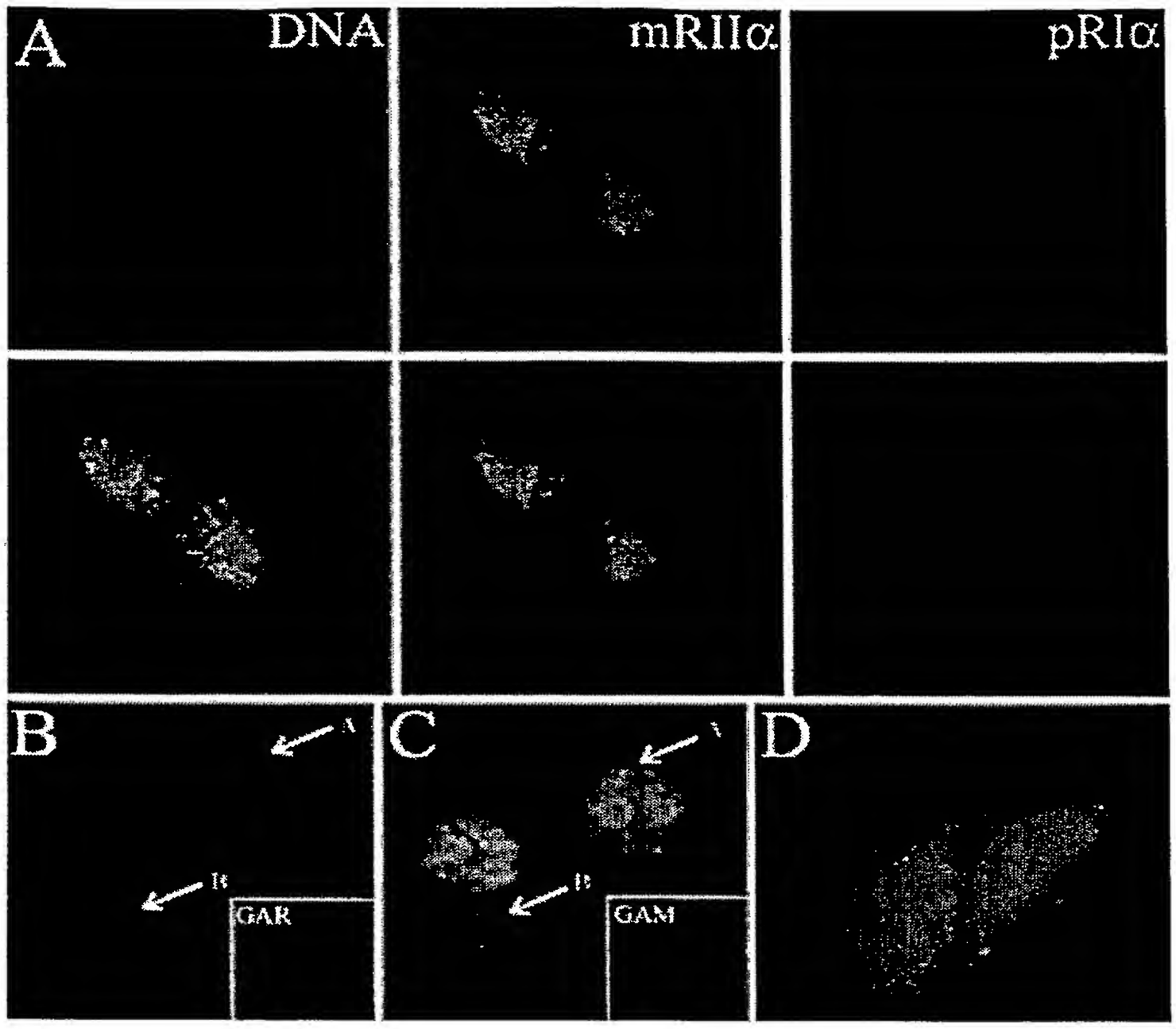

A
No Treatment
NaHCO3
NaHCO3 + H89
Forskolin
B
Vector
sAC
FSK
H89
P CREB
CREB
1 33 20 13 33 7
C
Vector
sAC
NaHCO3
H89
P CREB
CREB
1 9 7 10 14 2

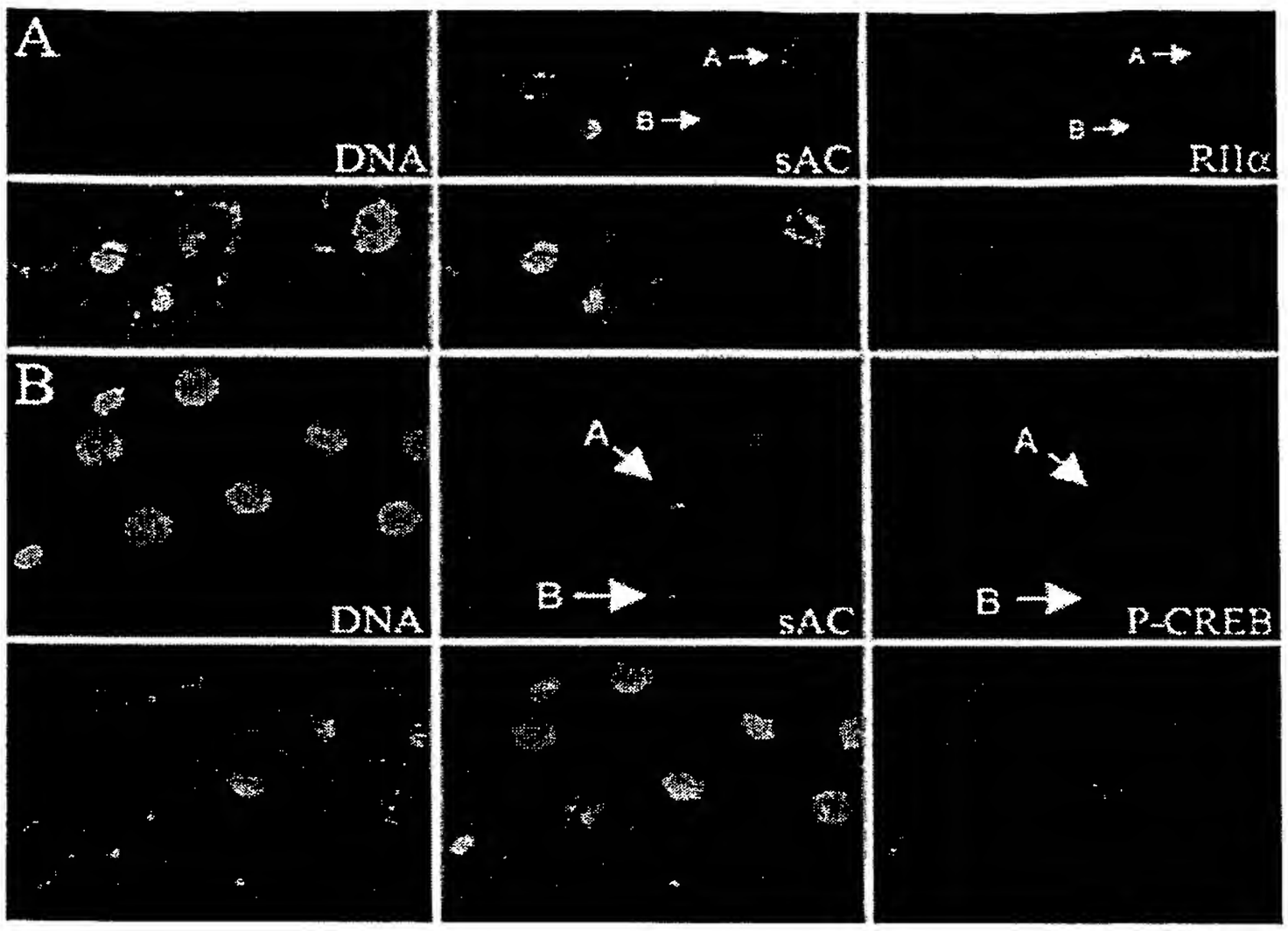
Figures 1 A-C


A
Min. 0 2 5 10 15 30 60
P CREB
CREB
Relative Intensity
Bicarbonate
(P-CREB/CREB)
20
15
10
5
0
0 2 5 10 15 30 60
Time (minutes)
B
P CREB
CREB
Relative Intensity
PGE2
(P-CREB/CREB)
12.5
10
7.5
5
2.5
0
0 2 5 10 15 30 60
Time (minutes)

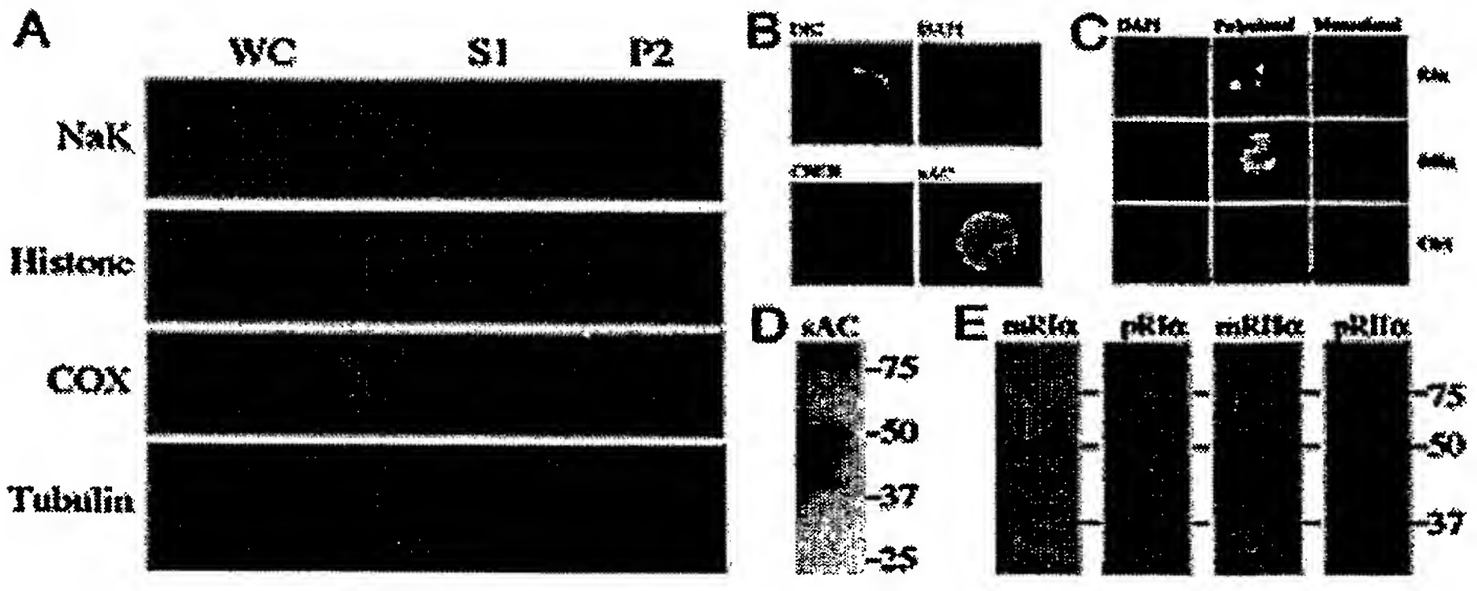
Figures 2 A-B



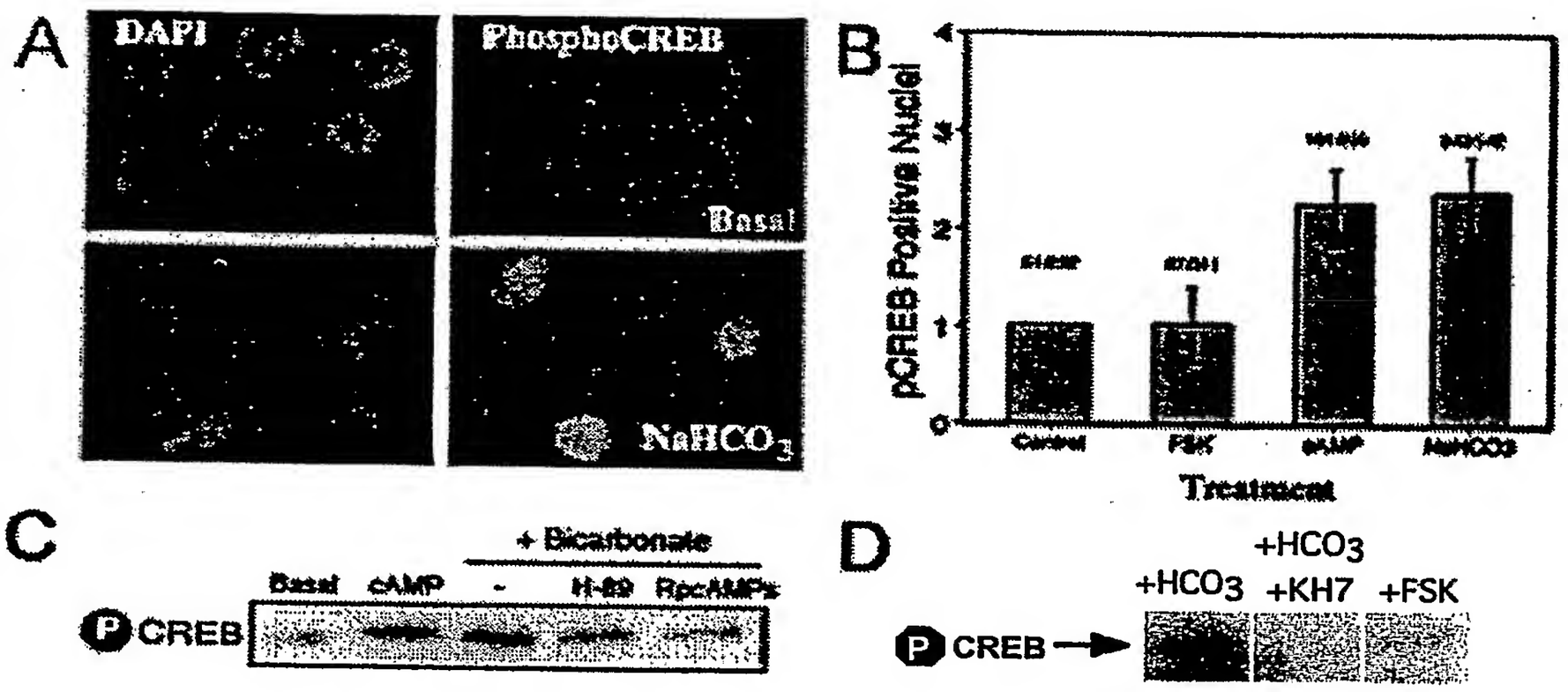
Figures 3 A-D



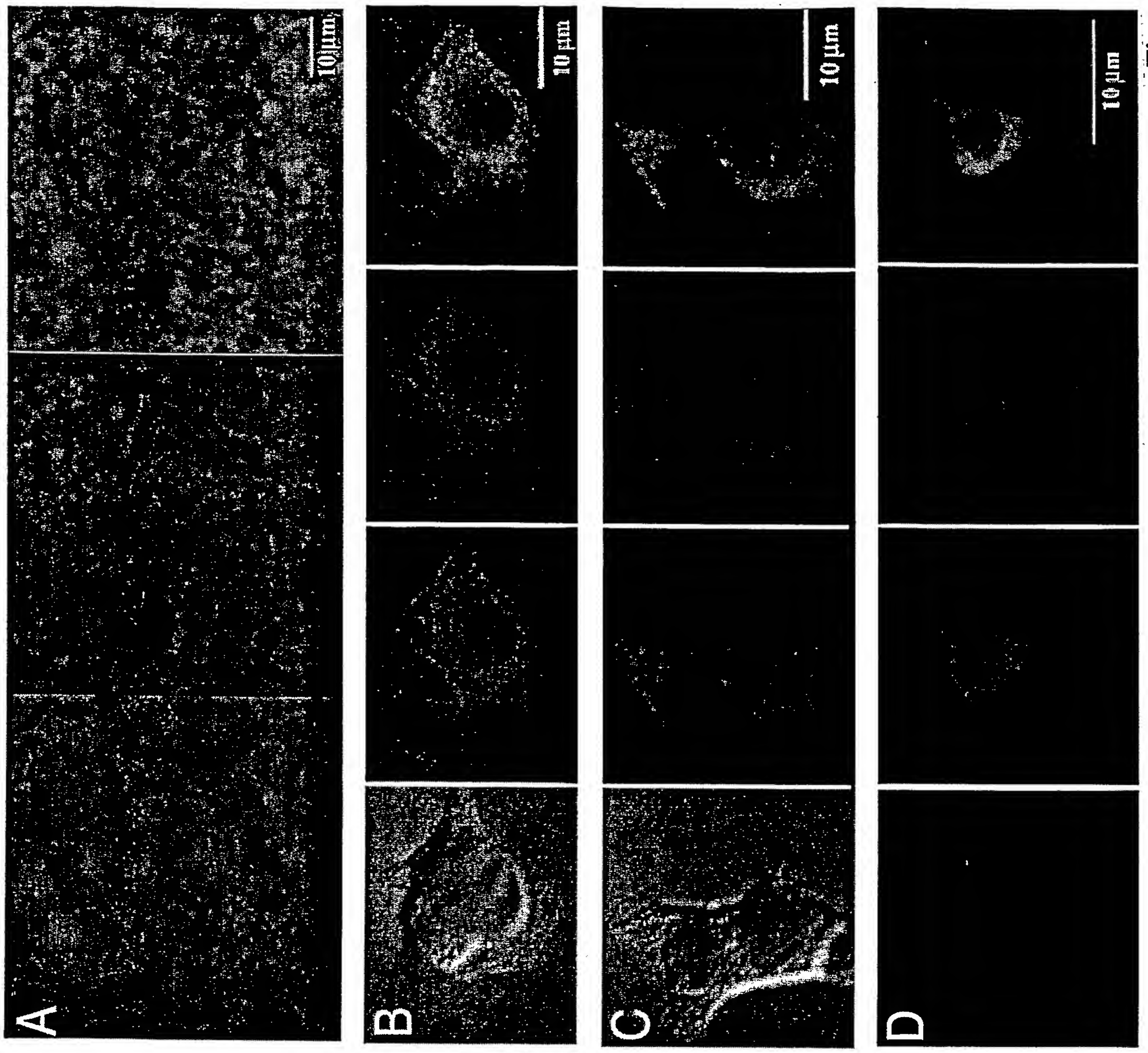
Figures 4 A-B


A
WC
S1
P2
NaK
Histone
COX
Tubulin
B
C
D
sAC
75
50
37
25
E
naRIα
pRIα
mRIIα
pRIIα
75
50
37

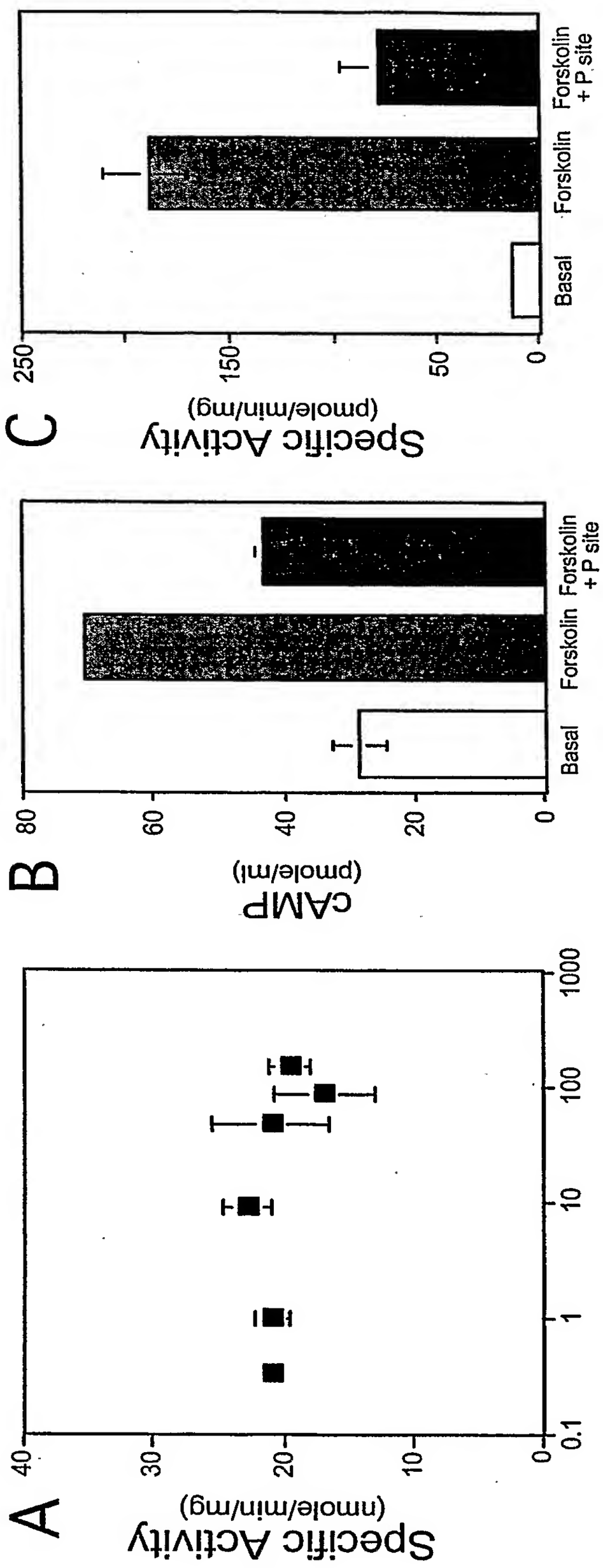
Figures 5 A-E


A
DAPI
PhospboCREB
Basal
NaHCO3
B
pCREB Positive Nuclei
Treatment
C
+ Bicarbonate
Basal cAMP - H-89 RpcAMPs
P CREB
D
+HCO3
+HCO3 +KH7 +FSK
P CREB

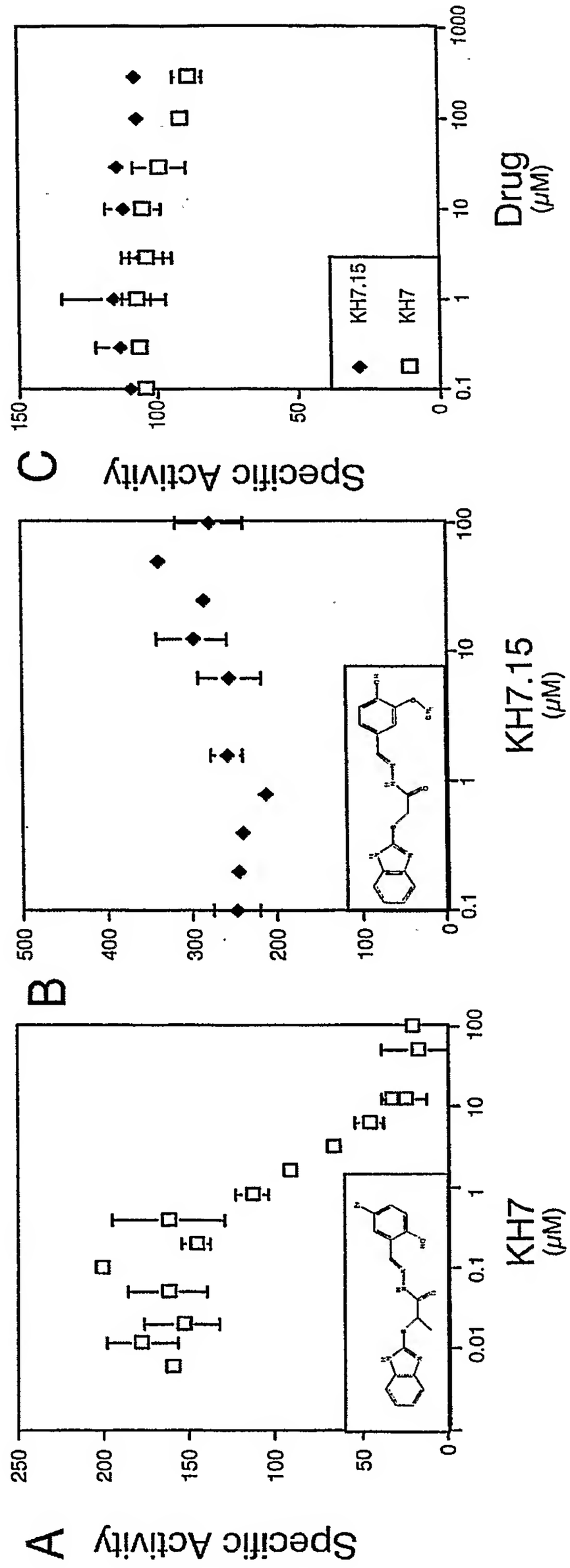
Figures 6 A-D



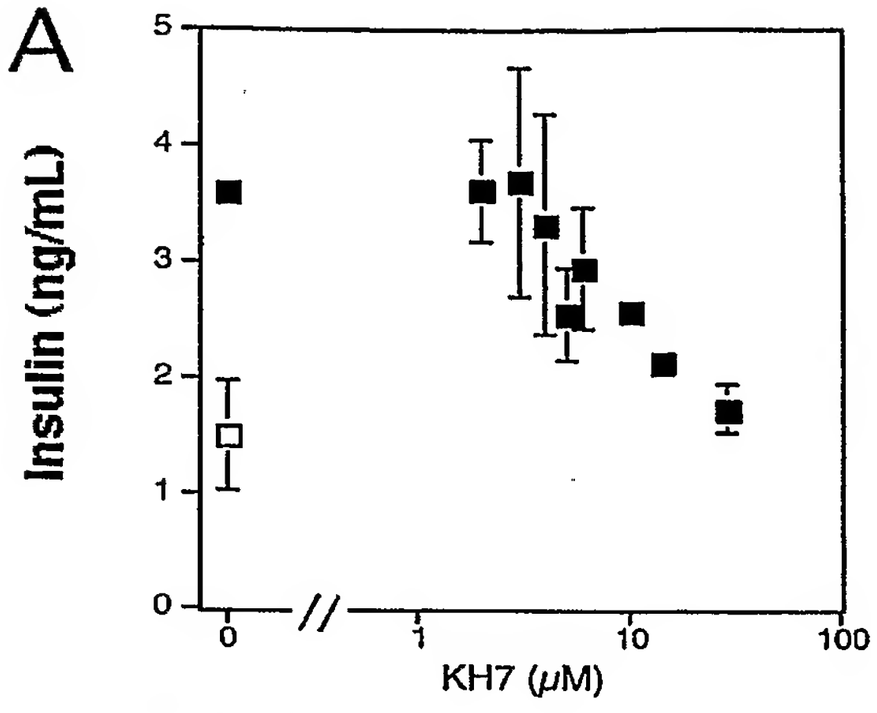
Figures 7 A-D

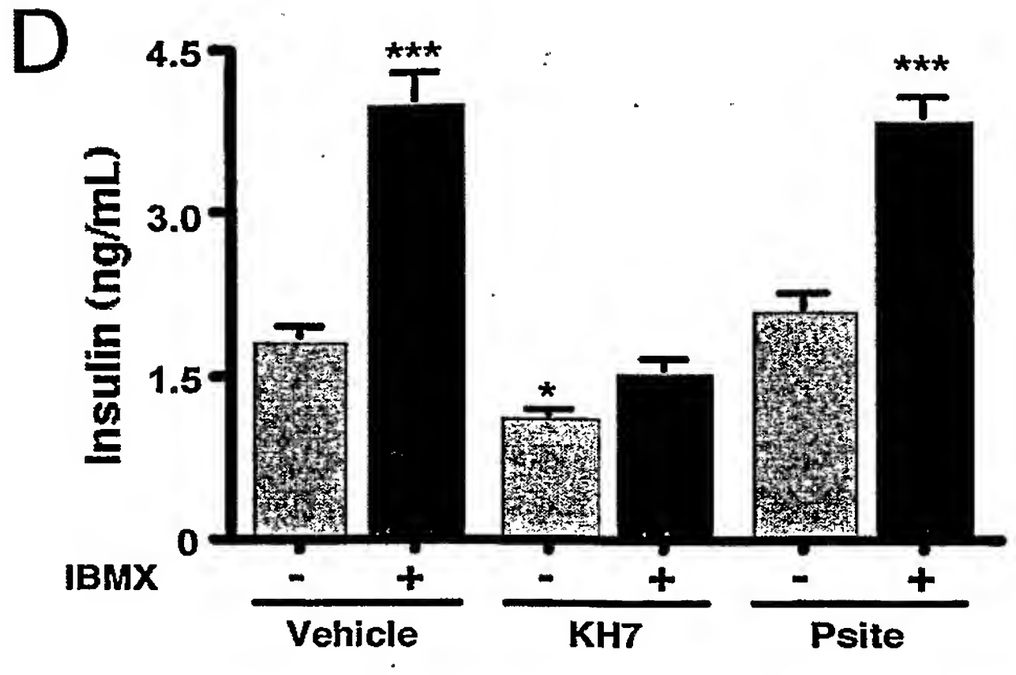

C
Specific Activity
(pmole/min/mg)
250
150
50
0
Basal
Forskolin
Forskolin + P site
B
cAMP
(pmole/ml)
80
60
40
20
0
Basal
Forskolin
Forskolin + P site
A
Specific Activity
(nmole/min/mg)
40
30
20
10
0
0.1
1
10
100
1000
2'5'ddAdo (μM)

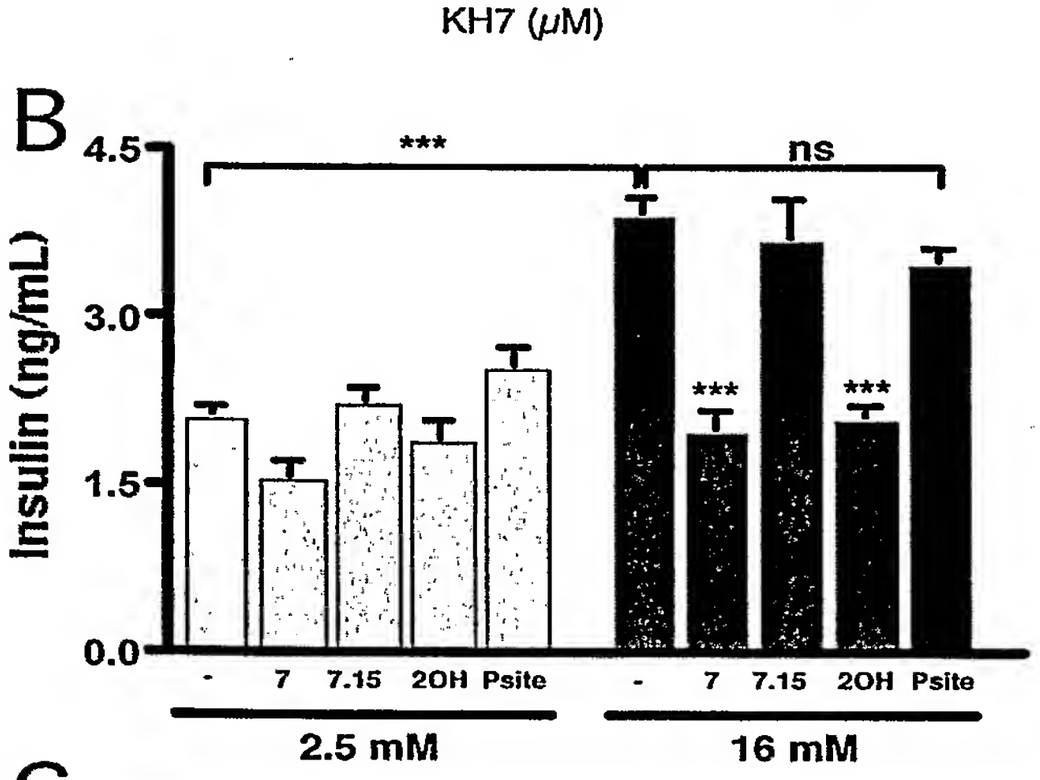
Figures 8 A-C

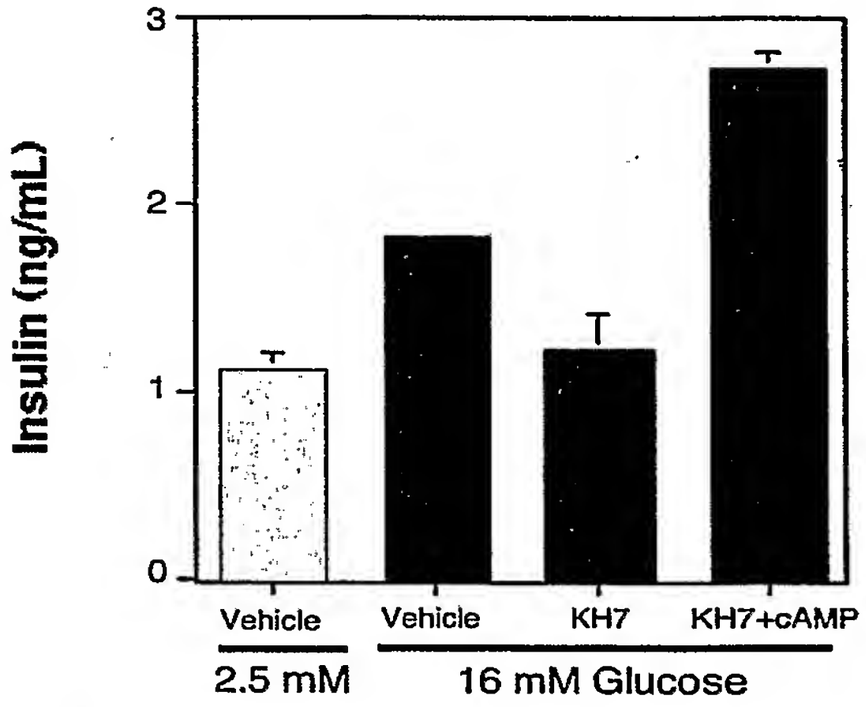

C
Specific Activity
KH7.15
(μM)
KH7.15
KH7
B
KH7
(μM)
A
Specific Activity
Drug
(μM)

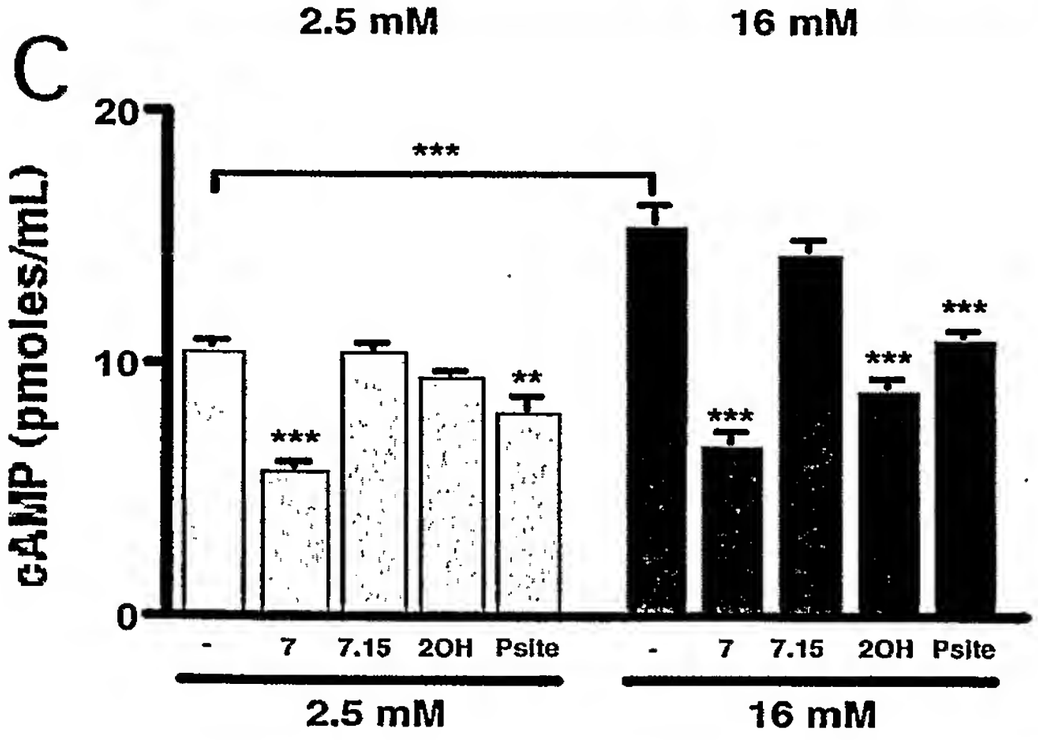
Figures 9 A-C

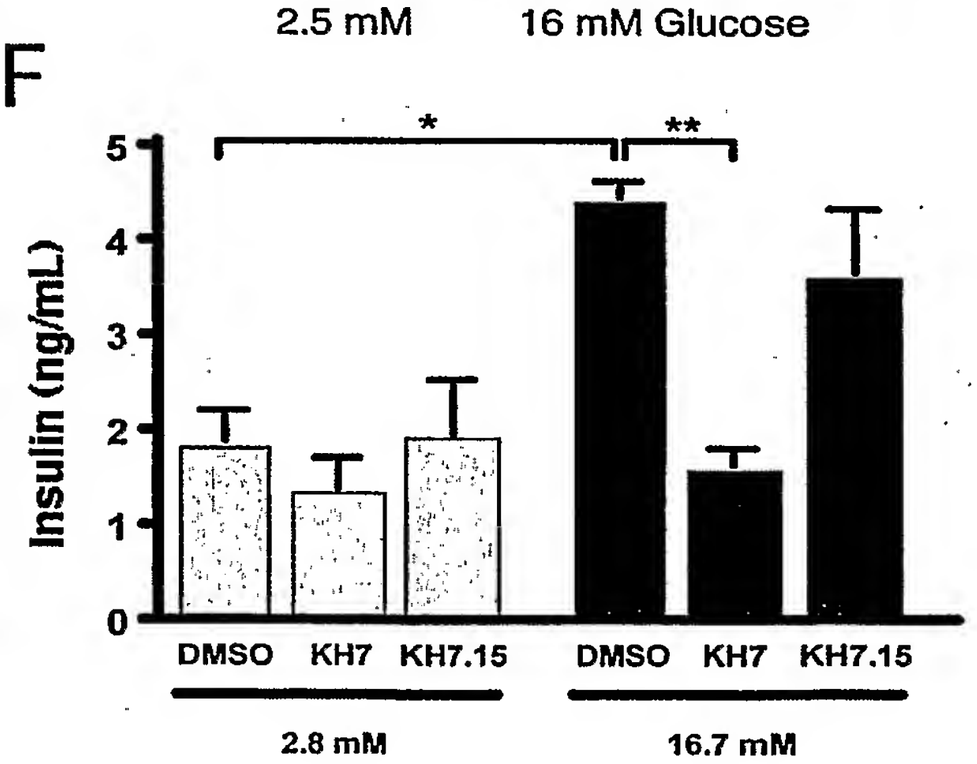












Figures 10 A-F

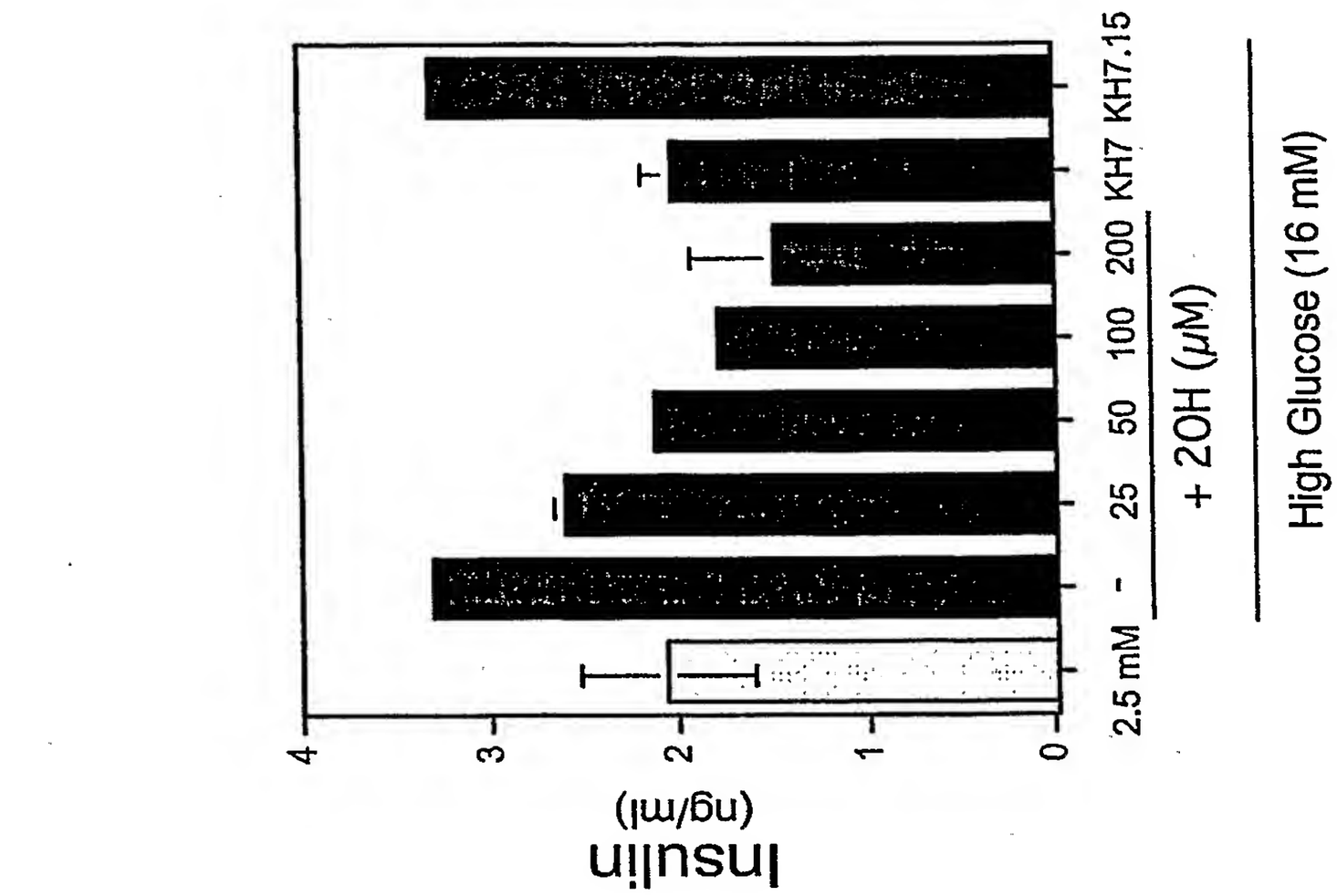
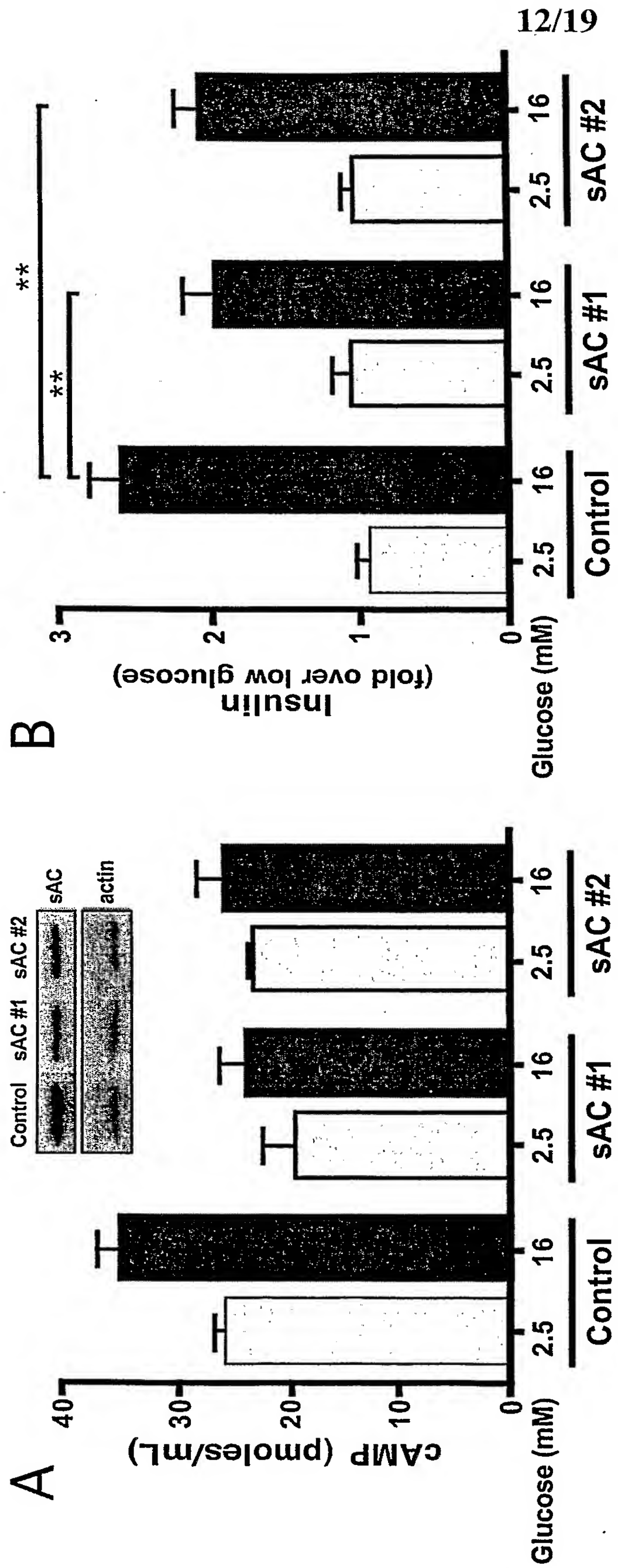
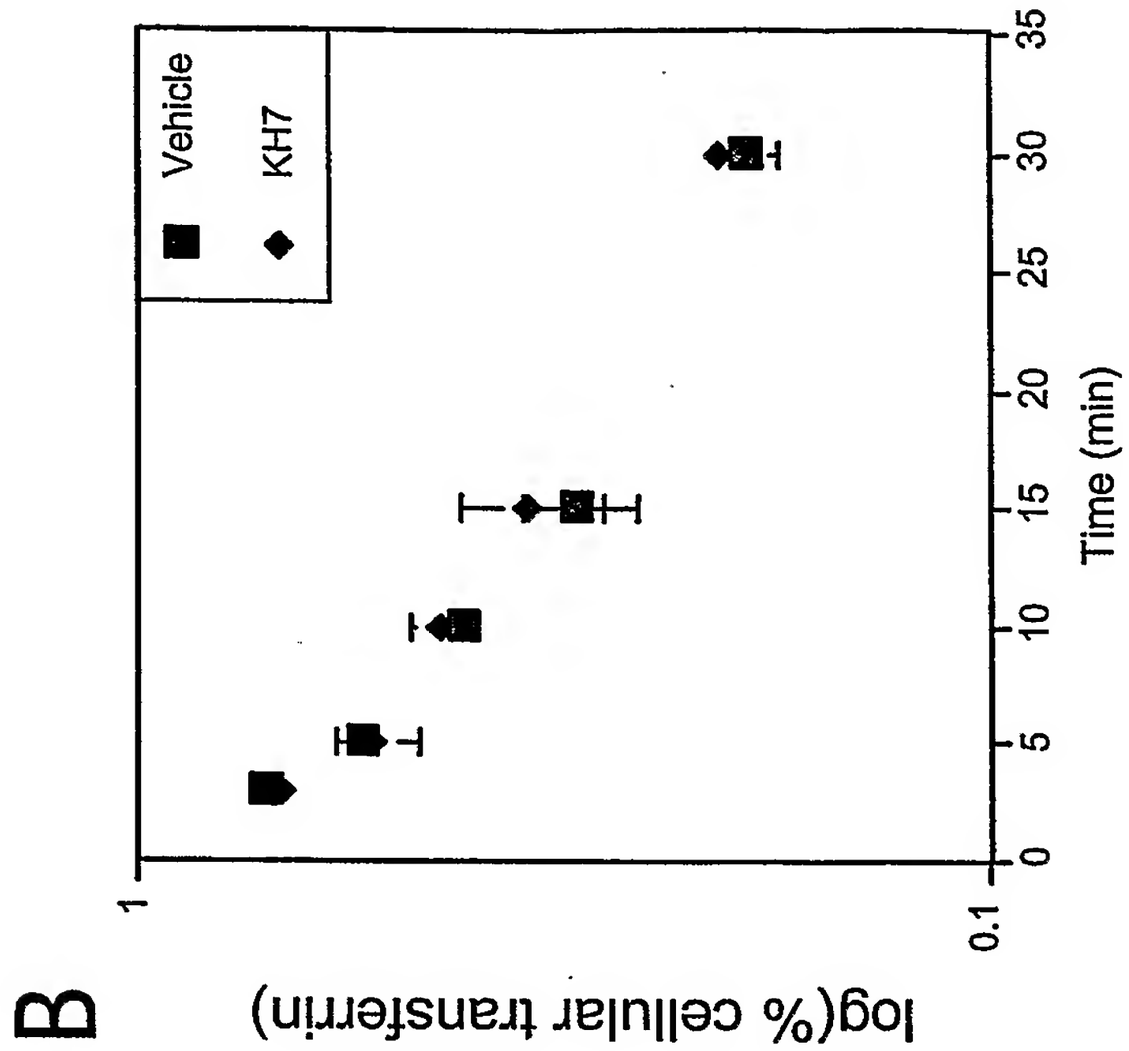
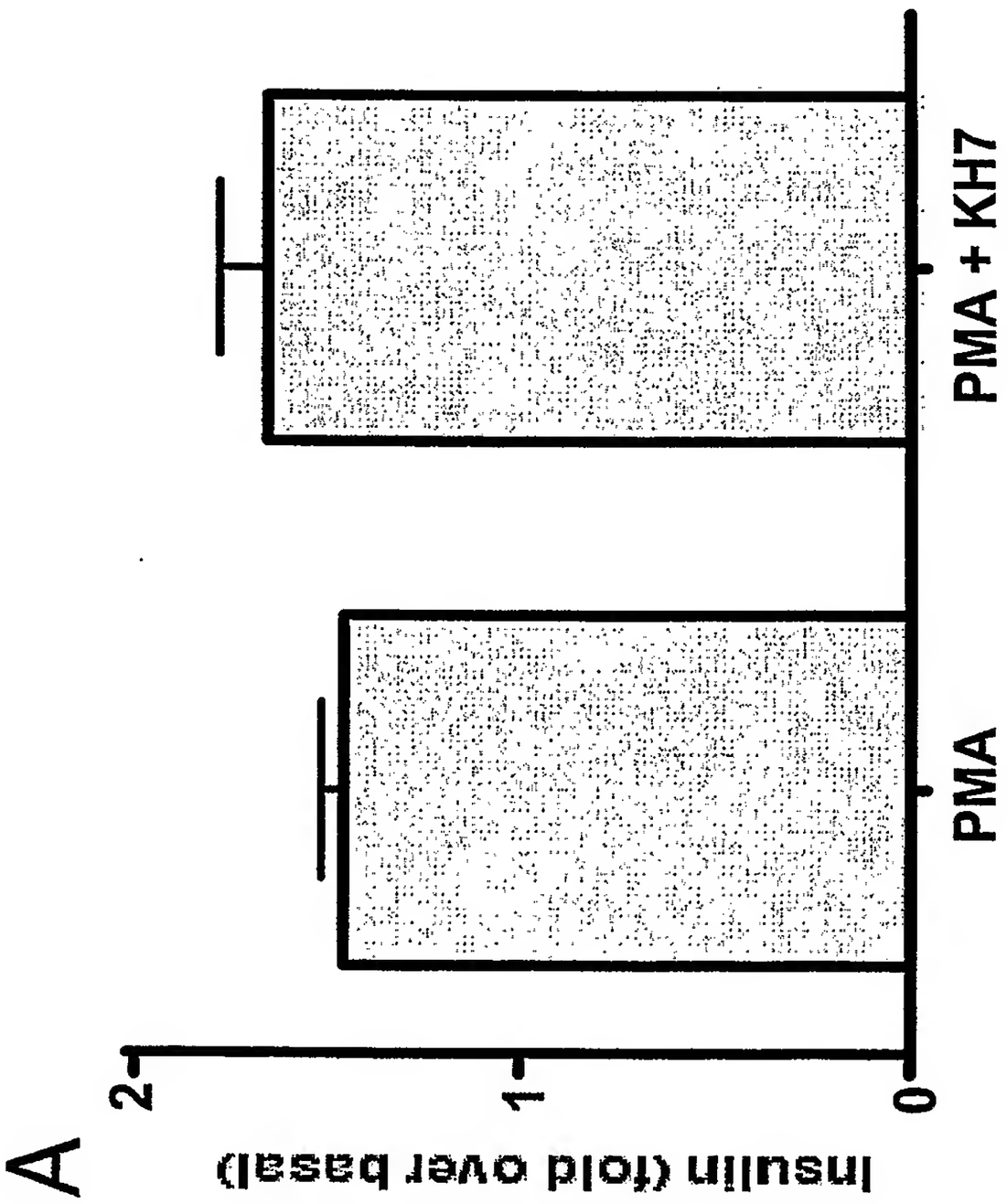

Insulin
(ng/ml)
0
1
2
3
4
2.5 mM
-
25
50
100
200
KH7
KH7.15
+ 2OH (μM)
High Glucose (16 mM)

Figure 11

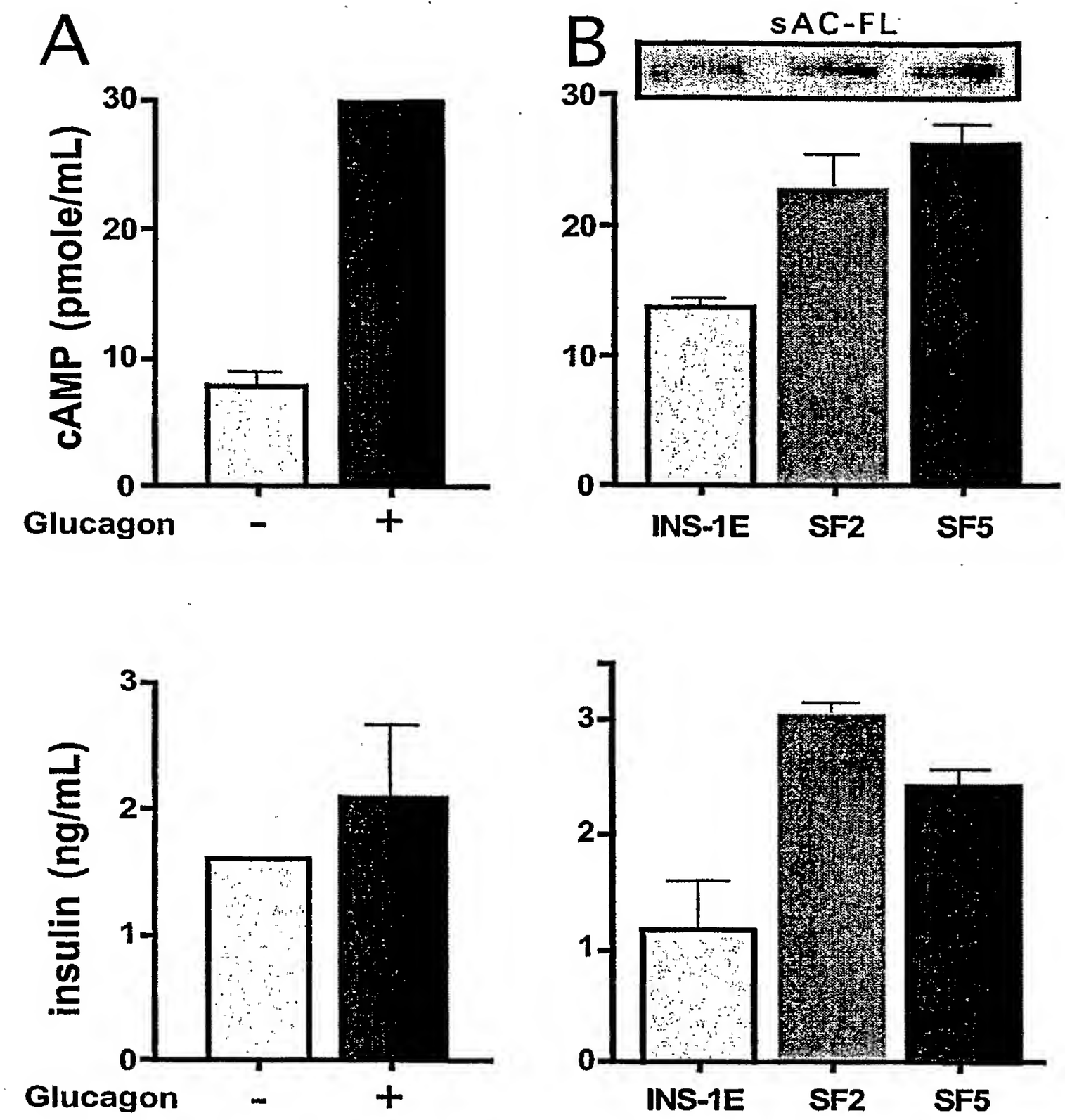


Figures 12 A-B

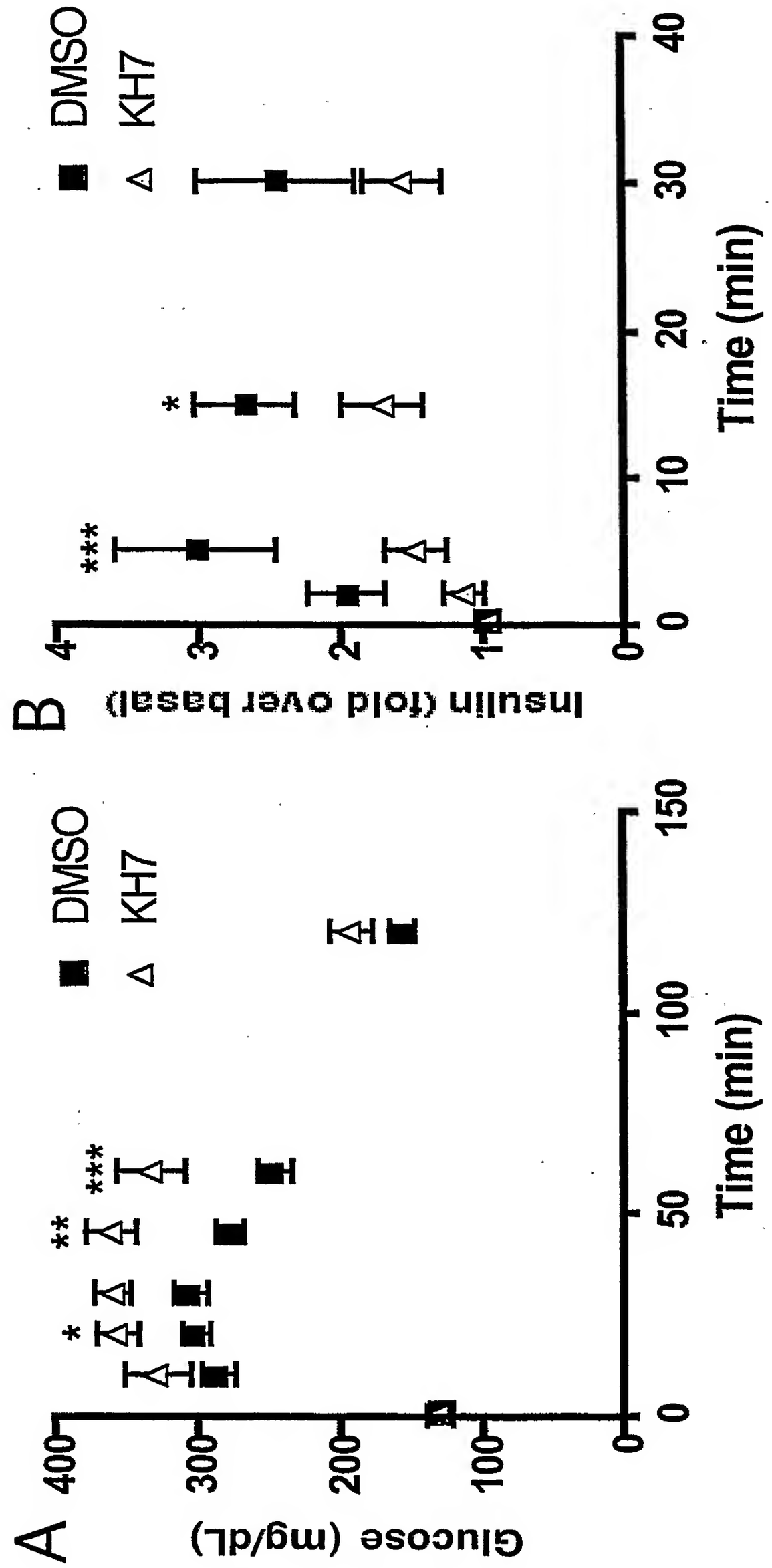




Figures 13 A-B

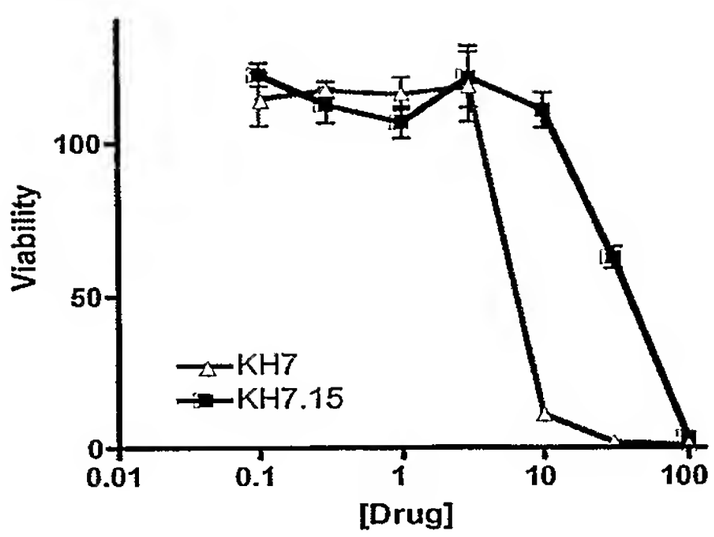


Figures 14 A-C

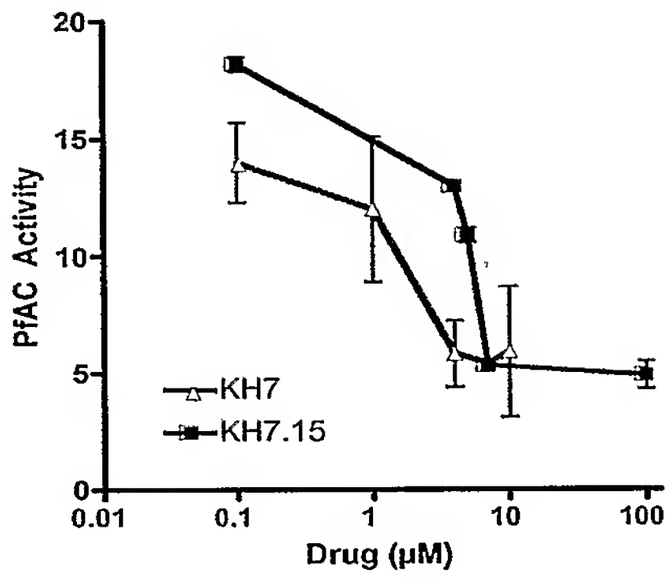


Figures 15 A-B

A



B



Figures 16 A-B

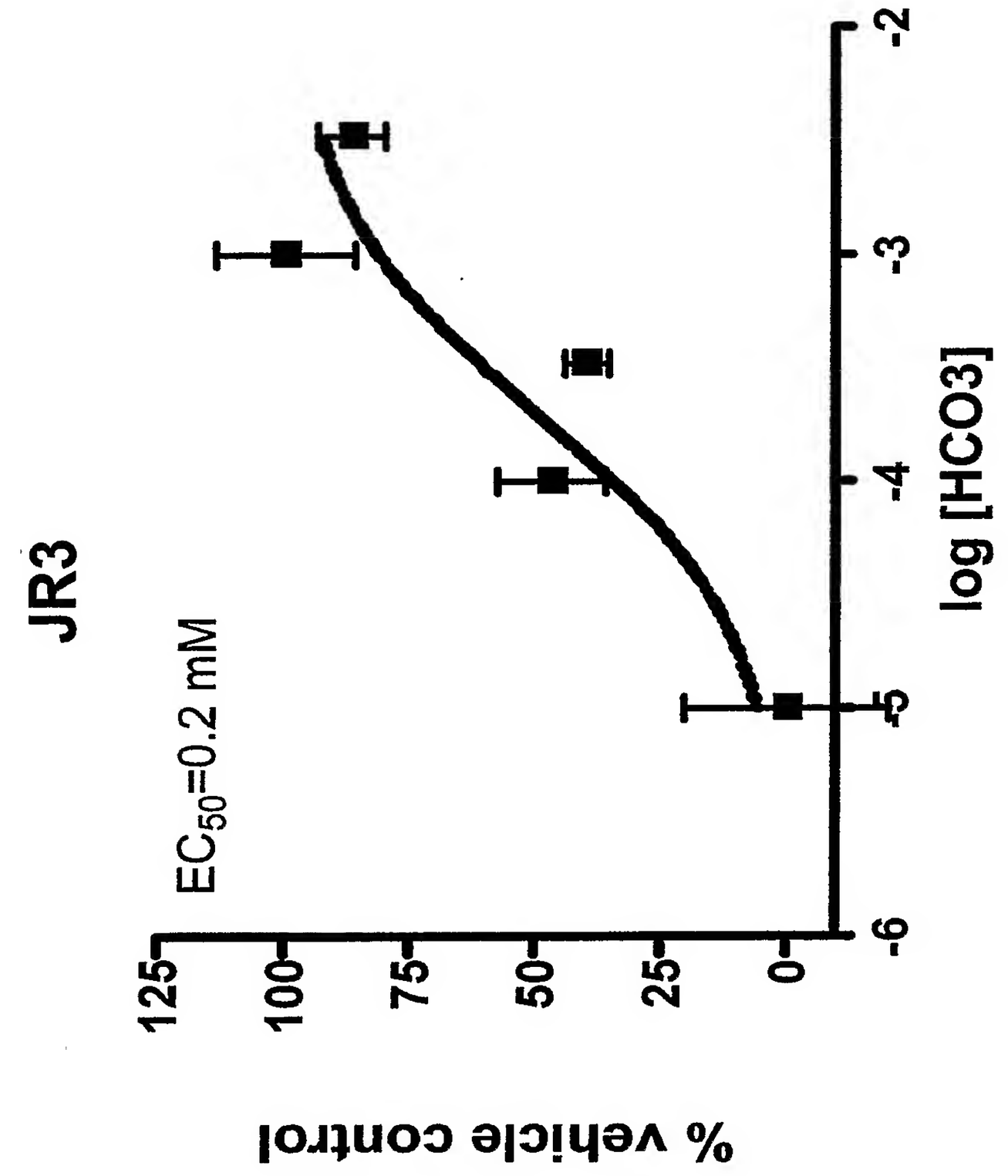

JR3
EC50=0.2 mM
% vehicle control
log [HCO3]
-6
-5
-4
-3
-2
0
5
0
5
0
5
2
5
7
10
12

Figure 17A

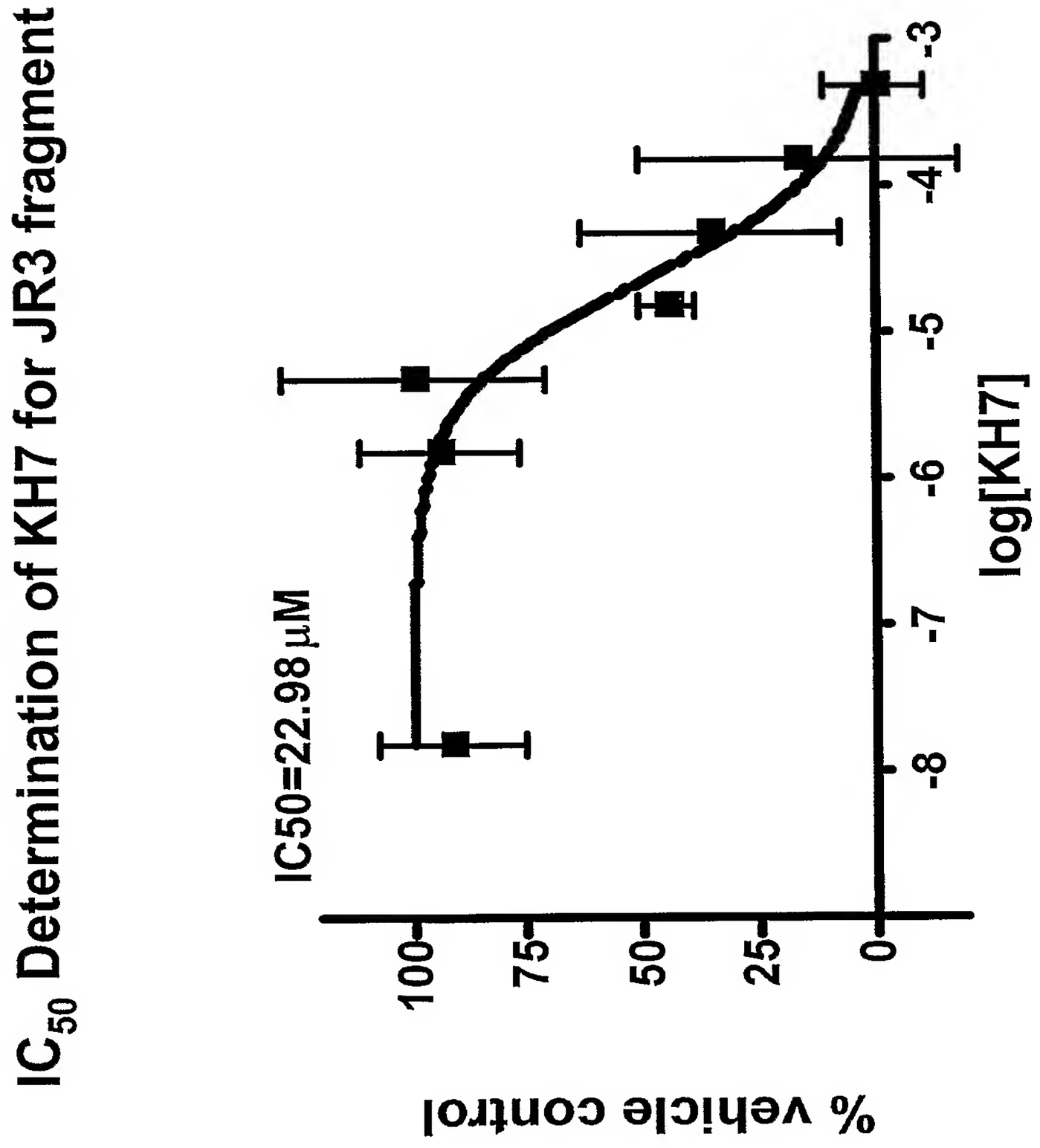

Determination of KH7 for JR3 fragmen
IC50=22.98 µM
% vehicle control
log[KH7]
IC50
100
75
50
25
0
-3
-4
-5
-6
-7
-8

Figure 17 B

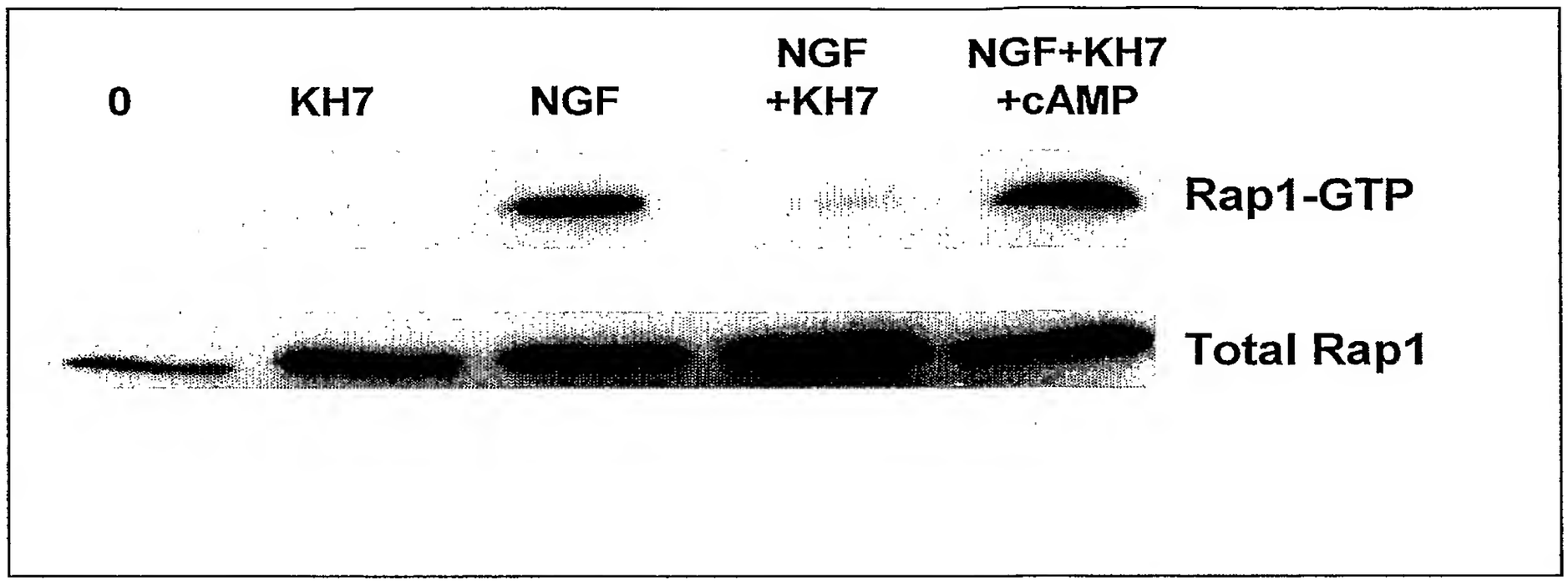


Figure 18